## SIXTEENTH REPORT OF THE COMMITTEE ON PLANT DISTRIBUTION

The fifteenth report included the genus Carex of the Cyperaceae. The present report deals with the genera of the Cyperaceae other than Carex.

The data for these reports have been compiled chiefly from the material found in the herbarium of the New England Botanical Club, in the Gray Herbarium and in the herbarium of the Peabody Museum at Salem, Massachusetts.

PRELIMINARY LISTS OF NEW ENGLAND PLANTS — XLI

The sign + indicates that an herbarium specimen has been seen, the sign - that a reliable printed record has been found and the sign \* is used for those plants which are not native in the New England area.

CYPERACEAE	Me.	N.H.	Vt.	Mass.	R.I.	Conn.	
Bulbostylis capillaris (L.) C. B. Clarke				+			
B. capillaris var. crebra Fern.	1	+	+	+	+	+	
Cladium mariscoides (Muhl.) Torr.	+	+	+	+	+	+	
Cyperus brevifolius (Rottb.) Hassk.							
C. dentatus Torr.	+	+	+	+	+	+	
C. diandrus Torr.	+	+	+	+	+	+	
C. Engelmannii Steud.			+	+			
C. erythrorhyzos Muhl.				+	+	+	
C. esculentus L.	+	+	+	+	+	+	
C. ferruginescens Boeckl.			+			+	
C. filicinus Vahl	+	+		+	+	+	
C. filiculmis Vahl				+	+	-}-	
C. filiculmis var. macilentus Fern.	+	+	+	+	+	-+-	
*C. fuscus L.				+			
C. Grayii Torr.				+	+	+	
C. Houghtonii Torr.	+	+	+	+			
C. inflexus Muhl.	+	+	+	+	+	+	
C. odoratus L.				+	+	+	
*C. ovularis (Michx.) Torr.				+			
C. polystachyos Rottb. var. texensis							
(Torr.) Fern.				+			
C. rivularis Kunth	+	+	+	+	+	+	
C. strigosus L.	+	+	+	+	+	+	
C. strigosus var. robustior Britt.				+		+	
X C. Weatherbianus Fern.							
(=Dulichium arundinaceum ×							
Rhynchospora capitellata)				+			

	Me.	N.H.	Vt.	Mass.	R.I.	Conn.
Dulichium arundinaceum (L.) Britt.	+	+	+	+	+	+
Eleocharis acicularis (L.) R. & S.	+	+	+	+	+	+
Eleocharis acicularis (El.) II. Wilss.)  E. acicularis var. submersa (Hj. Nilss.)						
Svenson	+			+		
E. ambigens Fern.				_	_	
E. calva Torr.	+	+	+	+		+
E. diandra C. Wright	+	+	+	+		+
E. elliptica Kunth	+	+	+	+	+	+
E. Engelmanni Steud.	+			+	+	+
E. Engelmann Stead.  E. equisetoides (Ell.) Torr.				+	+	+
X E. fallax Weath.				+		
	+	+		+	+	+
E. halophila Fern. & Brack.	+	+	+	+		+
E. intermedia (Muhl.) Schultes				+	+	
E. melanocarpa Torr. E. microcarpa Torr. var. filiculmis Torr.						+
		+				
E. nitida Fern.	+	+	+	+	+	+
E. obtusa (Willd.) Schultes		+	+	+	+	
E. obtusa var. ellipsoidalis Fern.	+	+	+	+		+
E. obtusa var. jejuna Fern.	+	+				
E. obtusa var. Peasei Svenson	+	+	+	+	+	+
E. olivacea Torr.	+	+	+	+		+
E. ovata (Roth) R. & S. E. ovata var. Heuseri Uechtritz	+	+				
	+	+	+		+	+
E. palustris (L.) R. & S.	+	+	+	+	+	+
E. palustris var. major Sonder	+	+		+	+	+
E. parvula (R. & S.) Link						
E. pauciflora (Lightf.) Link var.	+	+	+			
Fernaldii Svenson  E - Andrew lete (Michy) P & S Var						
E. quadrangulata (Michx.) R. & S. var.				+		+
crassior Fern.	+	+		+	+	+
E. Robbinsii Oakes	+			+	+	+.
E. rostellata Torr.	+	+	+	+	+	+
E. Smallii Britt.	+	+	,	+	+	+
E. tenuis (Willd.) Schultes	,			+	+	
E. tricostata Torr.		+		+	+	+
E. tuberculosa (Michx.) R. & S.	+					
Eriophorum angustifolium Honckeny	+					
E. angustifolium var. majus Schultz	+	+	+	+	+	+
E. gracile W. B. J. Koch	+	+	+	+	+	+
E. spissum Fern.		+				
E. tenellum Nutt.		+				
E. virginicum L.		+				
E. viridi-carinatum (Engelm.) Fern.						+
Fimbristylis autumnalis (L.) R. & S.						

F. autumnalis var. mucronulata (Michx.)	Me.	N.H.	Vt.	Mass.	R.I.	Conn
Fern.				+	+	- }-
Fuirena pumila Torr.				+	+	
Hemicarpha micrantha (Vahl) Pax	+	+		+	+	+
Psilocarya nitens (Vahl) Wood				+		
P. scirpoides Torr.				+	+	
Rhynchospora alba (L.) Vahl	+	+	+	+	+	
R. capillacea Torr.	+	+	+	+		+
R. capitellata (Michx.) Vahl	+	+	+	+	+	-1-
R. fusca (L.) Ait. f.	+	+	+	+	+	
R. inundata (Oakes) Fern.				+	+	
R. macrostachya Torr.	+			+	+	+
R. Torreyana Gray				+	+	
Scirpus acutus Muhl.	+	+	+	+		-1
S. americanus Pers.	+	+	+	+	+	1
S. ancistrochaetus A. E. Schuyler			+		1.	
S. atrocinctus Fern.	+	+	+	+	4	4-
S. atrovirens Willd.	+		,	+	1.40	
S. atrovirens var. georgianus (Harper)			,	1	Į.	
Fern.	1	1	1	+		
S. cespitosus L. var. callosus Bigel.	1		+			1
S. cespitosus var. delicatulus Fern.						
S. Clintonii Gray	1					
S. cyperinus (L.) Kunth	1	1	1	i	1	
S. cyperinus (E.) Runtin S. cyperinus var. pelius Fern.	1			+		
S. expansus Fern.				+		
		+		+	+	-+
S. fluviatilis (Torr.) Gray	+		+	+		-
S. Hallii Gray				+		
S. heterochaetus Chase			,	+	+	
S. hudsonianus (Michx.) Fern.	+	+	+	+	+	+
S. lineatus Michx.		+	+	+		
S. Longii Fern.				+		
S. maritimus L. var. Fernaldii (Bickn.)						
Beetle	+	+		+	+	
S. Olneyi Gray				+	+	+
S. paludosus Nels. var. atlanticus Fern.	+	+		+	+	+-
S. Peckii Britt.	+	+	+	+	+	+
S. pedicellatus Fern.	+	+	+	+	+	-1-
S. pedicellatus var. pullus Fern.	+	+	+	+		_1_
S. polyphyllus Vahl				+		+
S. Purshianus Fern.	+	+		+	+	+
S. robustus Pursh	+			+	+	
S. rubricosus Fern.				+		
S. rubrotinctus Fern.	+	+ .	+	+		+
S. Smithii Gray	+	+ -	+	+ -	+	4.
		40				

	Me.	N.H.	Vt.	Mass.	R.I.	Conn.
S. Steinmetzii Fern.	+					
S. subterminalis Torr.	+	+	+	+	+	+
S. Torreyi Olney	+	+	+	+	+	+
S. validus Vahl var. creber Fern.	+	+	+	+	+	+
S. verecundus Fern.			+	+	+	+
Scleria pauciflora Muhl. var. caroliniana						
(Willd.) Wood				+		+
S. reticularis Michx.				+	+	+
S. triglomerata Michx.				+		+
S. verticillata Muhl.						+

The Cyperaceae, other than Carex, were treated by Prof. M. L. Fernald in RHODORA X: 135-144, 1908. As in the case of Carex the number of specimens available for study has become very much larger since then and there has also been a considerable change in nomenclature in the intervening years. At the conclusion of his report Prof. Fernald included "Suggestions for Special Observation". Most of the range extensions that he predicted have proved to be correct, but many of the species from the southern United States have not as yet been reported from the New England area.

As in Carex the number of introduced species is insignificant. In fact there are only two, *Cyperus fuscus* and *C. ovularis*. The latter is native farther south but in New England it is known only as a casual waif on made land in Boston and has not been collected recently. In Prof. Fernald's report he cites this single station for *C. ovularis* and none for *C. fuscus*.

The geographical areas are in general the same as in the previous report.

1. GENERALLY DISTRIBUTED. — Dulichium arundinaceum, Eleocharis acicularis, E. elliptica, E. obtusa, E. palustris var. major, Eriophorum spissum, E. tenellum, E. virginicum, Rhynchospora alba, R. capitellata, Scirpus acutus, S. atrocinctus, S. atrovirens var. georgianus, S. cyperinus var. pelius, S. rubrotinctus and S. validus var. creber.

Eleocharis obtusa is poorly represented in northern Maine. Scirpus acutus is infrequent except for the Champlain Basin and the western Maine Coast. There are no stations for it in Rhode Island. Scirpus atrocinctus has not yet been reported from southern Rhode Island or southern Connecticut and has only one station in southeastern Massa-

chusetts. S. atrovirens var. georgianus has not yet been recorded from Aroostook County, Maine. Eriophorum spissum has not been reported from southern Connecticut and Rhode Island and is rare in southeastern Massachusetts, due to the absence of cold bogs in these areas.

1a. GENERAL, EXCEPT THE MAINE COAST EAST OF THE KENNEBEC RIVER.
— None.

ib. General, except the Washington county coast. — Cladium mariscoides.

ic. general, except cape cod. — Eriophorum viridi-carinatum, Scirpus atrovirens, S. pedicellatus and S. pedicellatus var. pullus.

Scirpus atrovirens is infrequent. S. pedicellatus var. pullus has a distribution in New England similar to the species, but is much less frequent.

IIa. NORTHERN — NONE OR NOT MANY STATIONS SOUTH OF 43°. — Eleocharis ovata and var. Heuseri, E. palustris, E. pauciflora var. Fernaldii, Eriophorum angustifolium, Scirpus cespitosus var. callosus and S. Clintonii.

The interpretation of the characters separating *Eleocharis ovata* and var. *Heuseri* is so difficult in many specimens that it might have been better to have treated the two together; *E. ovata*, as currently interpreted, appears to be local in southern New England with a single station in Massachusetts and two in central Connecticut. *E. palustris* occurs doubtfully at two stations in southern New England. *Eriophorum angustifolium* and *Scirpus Clintonii* are confined to Maine only.

IIb. NORTHERN — NUMEROUS STATIONS SOUTH OF 43°. — Scirpus hudsonianus.

III. ARCTIC-ALPINE. — None.

IV. SOUTHERN — GENERAL SOUTH OF 45°. — Bulbostylis capillaris var. crebra, Cyperus dentatus, Eleocharis Smallii, Rhynchospora fusca, Scirpus americanus, S. cyperinus and S. subterminalis.

Scirpus americanus is more abundant near the coast. S. subterminalis has been reported from only three stations in Vermont, all in upland areas.

IVa. SOUTHERN — GENERAL SOUTH OF 45° BUT NOT ON MAINE COAST EAST OF THE KENNEBEC RIVER. — Cyperus esculentus, C. filiculmis var. macilentus, C. rivularis, Fimbristylis autumnalis, Scirpus Purshianus and S. Smithii.

The only Vermont station for Fimbristylis autumnalis is near the Connecticut River in the extreme southeastern corner of the state.

IVb. SOUTHERN — GENERAL SOUTH OF  $45^{\circ}$  BUT NOT IN WASHINGTON COUNTY. — Cyperus diandrus, C. strigosus, Eleocharis olivacea and E. Robbinsii.

Eleocharis Robbinsii in New England is restricted to an area within a hundred miles of the coast.

IVC. SOUTHERN — GENERAL SOUTH OF 45° BUT NOT ON CAPE COD. — Eleocharis tenuis, Eriophorum gracile and Scirpus Torreyi.

Eleocharis tenuis is frequent in Maine, and in New Hampshire occurs in the Merrimack River basin and eastward to the coast. It is occasional in eastern Massachusetts and has been collected at East Hartford and Wallingford, Connecticut.

IVd. SOUTHERN — GENERAL SOUTH OF 45° BUT NEITHER ON CAPE COD NOR IN WASHINGTON COUNTY. — Bulbostylis capillaris, Cyperus inflexus, Eleocharis calva, E. diandra, E. obtusa var. ellipsoidalis and var.

jejuna and Scirpus expansus.

Cyperus inflexus is infrequent throughout New England east of the Connecticut River. Eleocharis calva is also infrequent east of the Connecticut River drainage area and is apparently absent from the coastal areas east of Connecticut. E. diandra is confined to the Kennebec, lower Merrimack, Thames and Connecticut River valleys. E. obtusa var. ellipsoidalis is frequent near the coast in eastern Massachusetts and southern Rhode Island.

v. CHIEFLY THE THREE SOUTHERN STATES. — Hemicarpha micrantha.
This species has a few stations in southeastern New Hampshire and adjacent southwestern Maine.

va. CHIEFLY THE THREE SOUTHERN STATES BUT NOT IN WESTERN MASSACHUSETTS. — Eleocharis Engelmanii, E. rostellata, Fimbristylis autumnalis var. mucronulata, Fuirena pumila, Rhynchospora macro-

stachya and Scleria reticularis.

Eleocharis Engelmanni is very local but with a marked concentration in the Boston region. There is one outlying station at Falmouth, Cumberland County, Maine. Eleocharis rostellata has been reported in Massachusetts in the east only; there is a single station in Maine at Phippsburg, Sagadahoc County. In New England it is strictly maritime. Fuirena pumila is local except on central Cape Cod; it has not been reported from Connecticut. Rhynchospora macrostachya is restricted to southeastern Massachusetts, Rhode Island and Connecticut with two outlying stations at Falmouth, Maine and at Leverett, Franklin County, Massachusetts. Scleria reticularis is restricted to within twenty miles of tidewater except for an outlying station in the Connecticut River valley near Springfield, Massachusetts.

vb. CHIEFLY THE THREE SOUTHERN STATES BUT NOT ON CAPE COD. -

Scirpus verecundus and Scleria triglomerata.

Scirpus verecundus occurs at one station in southwestern Vermont. Scleria triglomerata is absent east of the Sudbury River valley and from all the southeastern counties in Massachusetts except Nantucket.

VC. CHIEFLY THE THREE SOUTHERN STATES BUT NEITHER CAPE COD NOR WESTERN MASSACHUSETTS. — Cyperus erythrorhyzos, C. filiculmis and Eleocharis tuberculosa.

Cyperus erythrorhyzos is found chiefly in the lower Merrimack,

upper Nashua, Sudbury, Charles, Taunton, Blackstone and lower Connecticut River valleys. *Eleocharis tuberculosa* has two New Hampshire stations at Madison and Tamworth, both in Carroll County.

VI. SOUTHWESTERN NEW ENGLAND CHIEFLY.—Scirpus polyphyllus occurs at two Massachusetts stations in the Connecticut and Deerfield River valleys and at numerous riparian stations in Connecticut from the Connecticut River valley westward.

VII. WESTERN NEW ENGLAND — CHIEFLY WEST OF THE CONNECTICUT VALLEY. — Scirpus Peckii.

VIIIa. COASTAL PLAIN PROPER. — Cyperus polystachyus var. texensis, Eleocharis tricostata and Rhynchospora Torreyana.

Cyperus polystachyus var. texensis occurs locally in specialized habitats on Cape Cod in southeastern Barnstable County and on Nantucket. Eleocharis tricostata is very local with one station on Nantucket and two in southern Rhode Island. Rhynchospora Torreyana is also local on Cape Cod in central Barnstable County, on Nantucket and in southern Rhode Island.

VIIIb. COASTAL PLAIN EXTENSIONS. — Eleocharis melanocarpa and Rhynchospora inundata.

Eleocharis melanocarpa is restricted to southeastern Massachusetts and Rhode Island. Rhynchospora inundata has three stations in Plymouth County, Massachusetts, one in Barnstable County on Cape Cod and one in Rhode Island.

IXa. CALCIPHILE. —  $Rhynchospora\ capillacea$  and  $Scirpus\ cespitosus$  var. delicatulus.

Rhynchospora capillacea is local with only 8 stations. Scirpus cespitosus var. delicatulus has a very restricted range; in New England it is confined to extreme northern Maine.

IXb. CALCICOLOUS — CHIEFLY WEST OF THE CONNECTICUT RIVER IN THE SOUTH; IF IN THE EAST, MOSTLY NORTH OF 45°. — Eleocharis intermedia.

Xa. MARITIME IN VICINITY OF COAST. — Cyperus filicinus, C. Grayii, C. odoratus, Eleocharis halophila, E. parvula, Scirpus maritimus var. Fernaldii, S. Olneyi, S. paludosus var. atlanticus and S. robustus.

Cyperus filicinus has not been collected in Maine east of the Kennebec River. C. odoratus does not appear north of Cape Ann, Essex County, Massachusetts. Scirpus Olneyi has not been found north of Cape Cod except for a station at Kents Island, Newburyport. Eleocharis parvula, Scirpus maritimus var. Fernaldii and S. paludosus var. atlanticus are common all along the New England Coast. S. robustus is confined to the three southern states except for one station at Falmouth, Maine.

Xb. MARITIME WITH INLAND STATIONS. -- None.

XI. ESTUARINE. — None.

XII. MISCELLANEOUS. — Cyperus brevifolius, C. Engelmannii, C.

ferruginescens, C. Houghtonii, C. strigosus var. robustior, X C. Weatherbianus, Eleocharis acicularis var. submersa, E. ambigens, E. equisetoides, X E. fallax, E. microcarpa var. filiculmis, E. nitida, E. obtusa var. Peasei, E. quadrangulata var. crassior, Eriophorum angustifolium var. majus, Psilocarya nitens, P. scirpoides, Scirpus ancistrochaetus, S. fluviatilis, S. Hallii, S. heterochaetus, S. lineatus, S. Longii, S. rubricosus, S. Steinmetzii, Scleria pauciflora var. caroliniana and S. verticillata.

Cyperus brevifolius is a southern species which has been discovered at Greenwich, Connecticut and reported in Rhodora 51: 119-120, 1949. C. Engelmannii is found at Brattleboro, Vermont and at six stations in eastern Massachusetts. C. ferruginescens has one station in extreme southern Vermont and three in Connecticut, all along the Connecticut River. C. Houghtonii in New England occurs sparingly south of 45° but is not reported from Rhode Island and Connecticut. C. strigosus var. robustior, a variety of dubious validity, is seldom collected (six stations only!); as yet it has not been reported north of Boston.  $\times$  C. Weatherbianus was described by Prof. Fernald (Rhodora 20: 189-191, 1918) as an intergeneric cross between Cyperus dentatus Torr. and Rhynchospora capitellata (Michx.) Vahl from a single tussock found by C. A. Weatherby at Dennis on Cape Cod in 1915. Mr. Marcel Raymond of the Montreal Botanical Garden has recently studied the type and is convinced that it should be treated as a chance hybrid between Dulichium arundinaceum (L.) Britt. and Rhynchospora capitellata (Michx.) Vahl. (See Rhodora 64: 349, 350, 1962). Eleocharis acicularis var. submersa seems to be indistinguishable from f. longicaulis. There are stations in Maine and Massachusetts. E. ambigens reaches its northeastern limit of range at Cuttyhunk, Massachusetts. The only other station in our area is at Block Island, Rhode Island where it was collected by Prof. Fernald in 1913. E. equisetoides is local at Wellesley, Massachusetts, Cumberland and West Greenwich, Rhode Island and Thompson, Connecticut.  $\times$  E. fallax has been collected at Yarmouth, Massachusetts. E. microcarpa var. filiculmis is a southern variety which has one station in New England at Voluntown, Connecticut. E. nitida is represented by specimens from Colebrook and Columbia in Coös County, New Hampshire. E. obtusa var. Peasei has been collected at Fryeburg, Maine and Ossipee, New Hampshire. E. quadrangulata var. crassior has been found at Wellesley, Massachusetts and at Guilford and W. Guilford, Connecticut. Eriophorum angustifolium var. majus is, like the species, of northern distribution but is very local. It is represented by specimens from Matinicus and Oakland, Maine and is cited by Prof. Fernald in Gray's Manual, 8th ed., from Massachusetts. Psilocarya nitens occurs at Plymouth, Massachusetts, the only New England station yet discovered. P. scirpoides has been found at Brewster and Harwich on Cape Cod, Springfield, Massa-

chusetts and East Providence, Rhode Island. Scirpus ancistrochaetus, a recently described species, has been reported from near Bellows Falls, Vermont (See Rhodora 64: 43-49, 1962). S. fluviatilis is local in river valleys near the coast south of 45°, but is frequent along the shores of Lake Champlain. S. Hallii has been found in New England only at Winter Pond, Winchester in eastern Massachusetts. S. heterochaetus is local in Massachusetts and Rhode Island but there are numerous stations on the shores of Lake Champlain. It has also been reported in the Connecticut River valley. S. lineatus has one station in central Maine, one in south central New Hampshire, two in the Champlain Valley in western Vermont and five in the Housatonic River valley in western Massachusetts and Connecticut. S. Longii, in New England a plant of fresh water river valleys, is local in Middlesex and Suffolk Counties in eastern Massachusetts; one station has been discovered at South Windsor in central Connecticut. S. rubricosus has five stations in eastern Massachusetts, three of them on Cape Cod. S. Steinmetzii is represented by specimens from Passadumkeag, Penobscot County, Maine only. Scleria pauciflora var. caroliniana occurs at Uxbridge, Massachusetts and Columbia, Hartford and Waterford, Connecticut. It is cited from southwestern New Hampshire by Prof. Fernald in Gray's Manual 8th ed. S. verticillata has one station in northwestern Connecticut at Salisbury.

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Scheuchzeria in Western Pennsylvania. — In September, 1961, while exploring a large sphagnum-cranberry bog, new to us, in Erie County, Pennsylvania, W. E. Buker and the writer found an old fruiting specimen of Scheuchzeria palustris L. var. americana Fern. We visited this bog again in early June, 1962, and saw another plant in fruit. Although we are familiar with many bogs here, this is our first and only record of this plant from the western part of the State. In our herbarium, we have specimens from Carbon, Monroe, and Sullivan counties, all in eastern Pennsylvania.

This species, of which ours in America is a variety, is widely distributed over the cooler regions of the Northern Hemisphere, growing in cold sphagnum bogs and on peaty shores. — L. K. Henry, curator of plants, Carnegie Museum, Pittsburgh, Pa.